IN THE SPECIFICATION

Please amend the paragraphs of the specification as follows:

Please replace the first paragraph on page 1, commencing on line 7, with the following amended paragraph:

The present invention relates ~~is related~~ to the following U.S. Application for Patent:

Please replace the second paragraph on page 1, commencing on line 9, with the following amended paragraph:

U.S. Patent Application No. 08/963,386 entitled "METHOD AND APPARATUS FOR HIGH RATE PACKET DATA TRANSMISSION," filed on November 3, 1997, now U.S. Patent No. 6,574,211, issued June 3, 2003 to Padovani et al., and assigned to the assignee hereof which is hereby expressly incorporated by reference herein;

Please replace the fourth paragraph on page 1, commencing on line 14, with the following amended paragraph:

U.S. Patent Application No. ~~xx/xxx,xxx~~ 09/697,375, filed October 25, 2000, entitled ~~"METHOD AND APPARATUS FOR DETERMINING A DATA RATE IN A HIGH RATE PACKET DATA WIRELESS COMMUNICATIONS SYSTEM," filed concurrently herewith~~ METHOD AND APPARATUS FOR HIGH RATE PACKET DATA AND LOW DELAY DATA TRANSMISSIONS, and assigned to the assignee hereof ~~which is hereby expressly incorporated by reference herein~~.

Please replace the second paragraph on page 2, commencing on line 19, with the following amended paragraph:

The disclosed embodiments provide a novel and improved method for high packet data rate and low delay data transmission in a wireless communication system. In one embodiment, a base station in a wireless communication system first sets up low delay data transmission, effectively as high priority, and then schedules packet data services according to the available

traffic power after satisfying the low delay data. The packet data service transmits the packet data to one mobile user at a time. Alternate embodiments may provide packet data to multiple mobile users at a time, dividing the available power among the multiple users. At a given time, one user is selected as a target recipient based on the quality of the channel. The base station determines a ratio of the available power to the pilot channel power and provides the ratio to the selected mobile user. The ratio is referred to as the "Traffic-to-Pilot" ratio, or "T/P" ratio. The mobile user uses the ratio to calculate a data rate and sends that information back to the base station.

Please replace the last paragraph on page 4, commencing on line 30, with the following amended paragraph:

FIG. 9 illustrates in block diagram [[form]] from a portion of a receiver in an HDR wireless communication system according to one embodiment;

Please replace the first paragraph on page 5, commencing on line 1, with the following amended paragraph:

FIG. 10 illustrates in flow diagram ~~form a method~~ for processing traffic data in a wireless communication system implementing a signaling channel according to one embodiment; and

Please replace the second paragraph on page 5, commencing on line 4, with the following amended paragraph:

FIG. 11 illustrates in flow diagram ~~form methods~~ for determining a data rate for transmission in a wireless communication system according to one embodiment.

Please replace the first paragraph on page 7, commencing on line 10, with the following amended paragraph:

A packet data system 20 is illustrated in FIG. 1 consistent with the protocols defined by the HAI specification. In the system 20, a base station 22 communicates with mobile stations 26 through 28. Each mobile station 26-28 is identified by an index value from 0 to N, N being

the total number of mobile stations within the system 20. The packet data channel 24 is illustrated as a multiplexor to illustrate the switchable connection. The base station 22 may be referred to as an "access ~~terminal device~~ point" for providing connectivity to users (i.e., mobile station or access terminal), specifically, one user at a time. Note that an access terminal is typically connected to a computing device, such as a laptop computer, or a personal digital assistant. An access terminal may even be a cellular telephone with web access capabilities. Similarly, the packet data channel 24 may be referred to as an "access network" for providing data connectivity between a packet switched data network and the access terminal device. In one example, the base station 22 connects mobile stations 26-28 to the Internet.

Please replace the second paragraph on page 8, commencing on line 12, with the following amended paragraph:

FIG. 2 illustrates a state diagram describing operation of the system 20 of FIG. 1, such as an HDR system operation consistent with the HAI specification. The state diagram describes operation with one mobile user, MSi. At state 30, labeled "INIT," base station 22 acquires access to packet data channel 24. During this state, initialization includes acquiring a forward pilot channel and synchronizing control. Upon completion of the initialization, operation moves to state 32, labeled "IDLE." In the idle state, the connection to a user is closed, and the packet data channel 24 awaits further command to open the connection. When a mobile station, such as MSi, is scheduled, the operation moves to state 34, labeled "TRANSMIT." At state 34, the transmission proceeds with MSi, wherein MSi uses the reverse traffic channel, and the base station 22 uses the forward traffic channel. If the transmission or connection fails or the transmission is terminated, operation returns to IDLE state 32. A transmission may terminate if another user ~~within~~ of mobile stations 26-28 is scheduled. If a new user outside of mobile stations 26-28 is scheduled, such as MSj, operation returns to INIT state 30 to establish that connection. In this way, the system 20 is able to schedule users 26-28 and also users connected through an alternate access network.

Please replace the last paragraph on page 8, commencing on line 30 and bridging pages 8 and 9, with the following amended paragraph:

Scheduling users allows the system 20 to optimize service to mobile stations 26-28 by providing multi-user diversity. An example of the usage patterns associated with three (3) mobile stations MS0, MSi, and MSN within mobile stations 26-28 is illustrated in FIG. 3. The power received in dB at each user is graphed as a function of time. At time t_1 MSN receives a strong signal, while MS0 and MSi are not as strong. At time t_2 MSi receives the strongest signal, and at time t_3 [[MSN]] MSO receives the strongest signal. Therefore, the system 20 is able to schedule communications with MSN around time t_1, with MSi around time t_2, and with MS0 around time t_3. The base station 22 determines the scheduling at least in part based on the DRC received from each mobile station 26-28.

Please replace the second paragraph on page 10, commencing on line 21, with the following amended paragraph:

According to one embodiment, the PSCH channel format defines parallel sub-channels, each having a unique spectrum spreading code. One frame of data is then encoded, interleaved and modulated. The resultant signal is demultiplexed over the subchannels. At the receiver, the signals are summed together to rebuild a frame. A variable frame length-encoding scheme provides for longer frames at lower frame rates per slot. Each encoded packet is sliced into sub-packets, wherein each sub-packet is transmitted via one or multiple slots, providing incremental redundancy.

Please replace the first paragraph on page 15, commencing on line 9, with the following amended paragraph:

In one embodiment, the method for determining a data rate involves negotiation of the mobile station and base station. In the negotiations, the mobile station determines a maximum achievable data rate. The maximum achievable data rate represents a data rate possible if the mobile station is the only receiver of the base station. In this case, the total transmit power available from the base station is dedicated to the mobile station. As illustrated, at step 128 the mobile station receives a Broadcast-to-Pilot ratio, or B/P ratio. The broadcast power is the total transmit power of the base station. The pilot power is the power consumed for transmission of the pilot signal from the base station. The mobile station determines a normalized data rate as

a function of the B/P ratio and the pilot SNR at step 130. The normalized data rate corresponds to a data rate the mobile user would request if all of the broadcast power were available for data traffic to the mobile user and the pilot signal, ignoring other users within a system such as system 50 of FIG. 5. In other words, the normalized data rate is the maximum achievable data rate. The normalized data rate is then transmitted to the base station via the Normalized Data Rate Channel (NDRC) at step 132. The base station receives the NDRC from each mobile station and determines corresponding data rates for each mobile user. The data rate indicator is then transmitted to each mobile station at step 134. Processing then continues to step 144 and the mobile receives traffic at the data rate, and finally returns to step 122.

Please replace the second paragraph on page 16, commencing on line 16, with the following amended paragraph:

In an alternate embodiment, the mobile station estimates the T/P ratio using the received pilot signal. The received pilot signal provides a channel estimate used for decoding the traffic information. A low pass filter may be used to filter noise components from the received pilot signal. The filtering provides an estimate of the noise received with the pilot signal. The T/P ratio is then estimated based on the filtering results. As an example, consider a system model described by the following:

$$[[\begin{array}{l} r_k^t = \sqrt{T}cs_k + n_t \\ r_k^p = \sqrt{P}c + n_p \end{array} \text{ for } k=0, 1,\dots, M-1,]] \quad \underline{\begin{array}{ll} r_k^t = \sqrt{T}cs_k + n_k^t & \\ r_k^p = \sqrt{P}c + n_k^p & for\ k = 0,1,\dots,M-1. \end{array}} \qquad (1)$$

wherein r_k^t and r_k^p are the traffic and pilot signals, respectively, received at a mobile station. The channel gain, c is complex. The noise associated with the traffic and pilot are given as n_k^t and n_k^p, respectively. The lumped power for the pilot and traffic are given as P and T, respectively. As described $T = E_c^t G_t$ and $P = E_c^p G_p$, wherein E_c^t and E_c^p represent the energy

per chip for the traffic and pilot channels, respectively, and wherein G_t and G_p are the corresponding processing gains. Note that noises n_k^t and n_k^p are considered independent due to the orthogonality between different code channels, both with zero mean and variance N_t. For the above described system model, an estimate of the traffic-to-pilot ratio is given as:

Please replace the first paragraph on page 18, commencing on line 8, with the following amended paragraph:

In [[an]] another embodiment, a T/P ratio estimation algorithm estimates $h = \sqrt{Pc}$ with $\hat{h} = \frac{1}{M}\sum_{m=0}^{M-1} r_m^p$ and obtains the empirical probability density function (PDF) of $x_k = {r_k^t} \Big/ {\frac{1}{M}\sum_{m=0}^{M-1} r_m^p}$. Note that, for sufficiently large M, x_k can be considered approximately Gaussian with mean Rs_k. It is then possible to extract an estimate of R from the PDF of x_k. At this point there are a variety of ways to estimate R from the PDF of x_k. Several properties can be used in extracting the traffic-to-pilot ratio from the PDF. For example, for a high-order modulation such as associated with a high SNR, x_k's are grouped into several clusters. The layout of the centers of the clusters is similar to that of the constellation of s_k. For M-PAM, M-QAM and M-PSK, the constellation points are equally spaced. Note also that the distribution of each cluster approximately follows the Gaussian PDF. With source coding, such as compression and/or vocoding, and channel coding the transmitted symbols are equally likely.

Please replace the last paragraph on page 19, commencing on line 26 and bridging pages 19 and 20, with the following amended paragraph:

In a typical HDR system, such as system 20 illustrated in FIG. 1, one link is established between the base station at a time. In one embodiment, a wireless communication system is extended to support multiple users at one time. In other words, system 50 of FIG. 5 allows the

base station 52 to transmit data to multiple data users of mobile units 56, 58, and 60, concurrently. Note that while ~~three (3)~~ four (4) mobile units are illustrated in FIG. 5, there may be any number of mobile units within system 50 communicating with base station 52. Extension to multiple users provides for multiple communications via the packet data channel 54. At a given time, the users supported by the packet data channel are referred to as "active receivers." Each active receiver decodes the signaling message(s) to determine the T/P ratio of the packet data channel 54. Each active receiver processes the T/P ratio without consideration of the potential for other active receiver(s). The base station receives data rate requests from each active receiver and allocates power proportionally.